IN THE CLAIMS

1   (Currently Amended) A method to be performed on a computing device for providing improved assignment of product orders to one or more of a plurality of fulfillers, the method comprising:

receiving an order that requires fulfillment from one or more fulfillers, said order comprising individual order items;

ranking said plurality of fulfillers from most favorable to least favorable, based on specified criteria;

evaluating a two-dimensional in-memory data structure, that indicates which of said one or more of the plurality of fulfillers can fulfill which types of said individual order items, to determine whether the order can be fulfilled by a single fulfiller;

when all order items of the order can be fulfilled by a single fulfiller, assigning fulfillment of the entire order to the most-favorable fulfiller that can fulfill all order items; otherwise

splitting the order by assigning fulfillment of individual order items to the most-favorable fulfillers that collectively can fulfill all order items.

2   (Original) The method of claim 1, wherein said criteria include minimizing shipping costs for a customer that is to receive the order.

3   (Original) The method of claim 1, wherein said criteria include minimizing shipping costs for a middleman who received the order from a customer.

4   (Original) The methods of claim 1, wherein said criteria include minimizing shipping costs by minimizing the number of fulfillers used when splitting an order.

5   (Original) The method of claim 4, wherein said minimizing shipping costs comprises minimizing the cumulative shipping distances from said multiple fulfillers.

6 (Original) The method of claim 1, wherein the specified criteria include successively rotating the fulfillers in a round-robin manner to ensure fairness of selection of otherwise equally-qualified fulfillers.

7 (Original) The method of claim 1, further comprising:

automatically generating a fulfillment request based on how fulfillment has been assigned.

8 (Currently Amended) The method of claim 1, wherein a the two-dimensional in-memory data structure that is employed to indicate which of said one or more fulfillers can fulfill which types of said individual order items that may be ordered is organized based on said ranking.

9 (Original) The method of claim 8, wherein said two-dimensional data structure comprises a hash table.

10 (Currently Amended) A method to be performed on a computing device for providing improved fairness when assigning product orders to one or more of a plurality of fulfillers, the method comprising:

receiving an order that requires fulfillment from one or more fulfillers, said order comprising individual order items;

determining desirable attributes for fulfilling the order among a set of two or more available fulfillers;

ranking the set of fulfillers from most favorable to least favorable, based on said desirable attributes;

evaluating a two-dimensional in-memory data structure, that indicates which of said one or more of the plurality of fulfillers can fulfill which types of said individual order items, to determine whether the order can be fulfilled by a single fulfiller;

when all of the order items of the order can be fulfilled by a single fulfiller, assigning the order to the most-favorable fulfiller that can fulfill all of the order items; and

when all of the order items of the order cannot be fulfilled by a single fulfiller, assigning the order to a subset comprising the most-favorable fulfillers that, collectively, can fulfill all order items of the order.

11 (Original) The method of claim 10, wherein said desirable attributes include minimizing shipping costs for a customer that is to receive the order.

12 (Original) The method of claim 10, wherein said desirable attributes include minimizing shipping costs for a middleman who received the order from a customer.

13 (Original) The methods of claim 10, wherein said desirable attributes include minimizing shipping costs by minimizing the number of fulfillers used when splitting an order.

14 (Previously Presented) The method of claim 13, wherein said minimizing shipping costs comprises minimizing the cumulative shipping distances from said fulfillers.

15 (Original) The method of claim 10, wherein the desirable attributes include successively favoring different fulfillers by rotating the fulfillers in a round-robin manner, thereby ensuring fairness of selection of otherwise equally-qualified fulfillers.

16 (Original) The method of claim 10, further comprising:
automatically generating a fulfillment request based on how fulfillment has been assigned.

17 (Currently Amended) The method of claim 10, wherein a the two-dimensional in-memory data structure that is employed to indicate which fulfillers can fulfill which types of said individual order items that may be ordered is organized based on said ranking.

18 (Original) The method of claim 17, wherein said two-dimensional data structure comprises a hash table.

19   (Original) The method of claim 18, wherein said two-dimensional data structure is extended into a three-dimensional data structure by having each entry of the hash table index, based on fulfiller/order item, into a bit vector indicating one or more order items for the order that may be fulfilled by that corresponding fulfiller shipping that corresponding order item.

20   (Original) The method of claim 10, wherein each fulfiller is a selected one of a distributor, supplier, vendor, manufacturer, or service bureau.